

REMARKS

Claims 1, 4, 14 and 28-66 are pending. Claims 4, 14, 29 and 62 are cancelled herein, claims 2, 3, 5-13 and 15-27 having been previously cancelled. Claims 1, 30, 32, 38, 48, 52, 58-61, 63 and 64 are amended, wherein the amendments to claims 30, 32, 38, 48, 52, 63 and 64 are to correct dependencies or to address minor informalities only, support for the remaining amendments being found at the Specification, paragraph [0054], [0063], [0073] and [0103] and respectively related Figs. 3, 11, 22 and 35. Support for the amendments is thus found throughout the Specification, which has been previously amended to address informalities found therein. No new matter is submitted.

With respect to item 1 of the Office Action, Applicants have previously amended the Specification to address minor informalities found therein.

With respect to the claim interpretation issues presented in item 2 of the Office Action, Applicants have amended claims 1, 58 and 59 to clarify that the actuator moves the conduit member in order to dispense liquid therefrom. Further, claim 58 recites different structure, e.g., “liquid holding means” (claim 58) versus “conduit member” (claim 1). Thus, these claims differ by more than their respective preambles. Further still, with respect to claim 59, Applicants maintain that the micro-array apparatus of claim 59 differs from the pipetting apparatus of claim 1 as well. Accordingly, Applicants submit that claims 1, 58 and 59 are not redundant and respectfully request that consideration and examination on their independent merits continue.

With respect to the 35 U.S.C. §112, 2nd paragraph rejections of claims 28-40, 42-43, 48, 50, 53, 55, 57-58 and 62-63 in items 3-8 of the Office Action, Applicants submit that the cancellation of claims 29 and 62 render moot any rejection thereof. Applicants

further submit that amendments to claim 1 to clarify the structure of the claimed liquid pipetting apparatus and claims 28, 30-40, 42-43, 48, 50, 53, 55 and 57 do or have been amended to depend directly or indirectly from clarified claim 1, thereby obviating any 35 U.S.C. §112, 2nd paragraph rejections of claims 28-40, 42, 43, 48, 50, 53, 55 and 57. The plurality of conduit members of claim 57 is amply supported in the Specification at Fig. 6, for example, wherein a conduit member is illustrated as conduit members 50₁-50₄. Moreover, claims 32, 48, 52 and 53 have been amended to address any antecedent basis issues as well. Similarly, claim 58 has been amended to clarify its structures, as well as to address antecedent basis issues, thereby obviating any 35 U.S.C. §112, 2nd paragraph rejection thereof. Still further, claim 61 has been amended to clarify features of the method recited therein, and claim 63 has been amended to depend therefrom clarified claim 61, thereby obviating any 35 U.S.C. §112, 2nd amendments thereof. Claims 1, 28 and 30-60 appropriately recite structure, whereas claims 61 and 63-66 appropriately recite method features. Thus, withdrawal of the 35 U.S.C. §112, 2nd rejections of claims 28-40, 42, 43, 48, 50, 53, 55, 57, 58, 62 and 63 is respectfully requested.

In item 10 of the Office Action, claims 1, 28-40, 42-53, 55 and 57-66 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent No. 5,957,167 to Feygin (hereafter “Feygin”). The rejection is respectfully traversed.

To maintain a 35 U.S.C. §102 rejection, a reference must teach each and every element of a claimed invention. Lindeman Maschinenfabrik GMBH v. American Hoist and Derrick Company, 730 F.2d 1452, 1458; 221 U.S.P.Q. 481, 485 (Fed. Cir., 1984). Feygin does not do so.

Applicants' independent claim 1 recites a liquid pipetting apparatus comprising, *inter alia*, a conduit member for holding liquid therein and for dispensing the held liquid therefrom, and an actuator which moves the conduit member in a direction opposite to a dispensing direction of the liquid; wherein the liquid held in the conduit member is dispensed from one end thereof, when the actuator moves the conduit member in the direction opposite the dispensing direction of the liquid. As recited in claim 1, the liquid is thus dispensed when the conduit member moves in the direction opposite to the dispensing direction of the liquid by moving the conduit member. The amount, rate and position of liquid dispensed can thus be controlled. Independent claims 58-60 recite structural features such that the dispensing of liquid is achieved as the conduit member is moved in a direction opposite to the dispensing direction of the liquid. Claim 61 generally recites a method of dispensing liquid from a conduit member or liquid holding means by movement of a conduit member in a direction *opposite* the direction of the dispensing liquid.

Feygin discloses a method and device wherein an actuator stops and rapidly decelerates a liquid dispensing member (col. 4, lines 9-12 & Fig. 5), and liquid held in the liquid dispensing member that is rapidly decelerated is dispensed therefrom (col. 4, lines 41-44). However, Feygin further discloses dispensing liquid from fluid dispensing members 300a, 300b, 300c, for example, (Fig. 6), whereby spring actuators 614a, 614b, 614c expand to urge the fluid dispensing members in the same direction as the fluid being dispensed (see Fig. 6 and col. 4, lines 32-44). Thus, Feygin teaches a method and device whereby fluid is dispensed in an exactly contrary manner to that recited in each of the independent claims 1 and 58-61 of Applicants' invention, which dispenses liquid by the

movement of components in a direction *opposite* from the direction of the dispensing liquid. Each of independent claims 58-61 recite similar movement of components in opposite directions from the direction of the dispensing liquid, contrary to that disclosed in Feygin. All pending claims depend directly or indirectly from claims 1 and 58-61 of Applicants' invention. Thus, as Feygin fails to teach or disclose each and every element of the claimed invention, withdrawal of the 35 U.S.C. §102(e) rejection of claims 1-28-40, 42-53, 55 and 57-66 based on Feygin is respectfully requested.

In item 11 of the Office Action, claims 1, 4 and 57-66 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. to Shalon, et al. (hereafter "Shalon"). The rejection is respectfully traversed.

Applicants' invention with respect to independent claims 1 and 58-61 is discussed above. Shalon discloses a variety of printhead configurations, including capillary printing systems, for depositing ink or other agents onto a substrate. Where the printing methods of Shalon decelerate a capillary to move minute liquid held therein through a bore, out of a tip, and onto the substrate, however, the printing is achieved by contact printing, e.g., by tapping the tip onto the substrate (col. 2, lines 22-25 & 32-39, and col. 6, line 65 – col. 7, line 5). Shalon thus teaches printing by moving a fluid dispensing member in the same direction as the direction in which liquid is dispensed as by decelerating the capillary vertically towards the substrate. Nothing in Shalon even suggests dispensing liquid by movement of components in a direction *opposite* the dispensing direction, as recited in each of independent claims 1 and 58-61 of Applicants' invention, from which all remaining claims directly or indirectly depend. Accordingly,

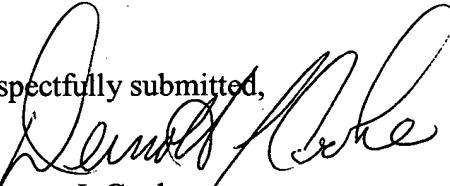
withdrawal of the 35 U.S.C. §102(b) rejection of claims 1, 4 and 57-66 based on Shalon is respectfully requested.

In item 12 of the Office Action, claims 1, 14, 28-50 and 54-66 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent No. 6,551,557 to Rose, et al. (hereafter “Rose”). The rejection is respectfully traversed.

Applicants’ invention with respect to independent claims 1 and 58-61 is discussed above, wherein dispensing liquid from a conduit member or liquid holding means by movement thereof in a direction opposite the dispensing direction of the liquid is detailed. Rose, in Fig. 11, discloses liquid dispensed in a vertical downward direction. Rose further discloses that chips 200 are moved in the direction opposite the liquid dispensing direction (col. 7, line 28 & col. 9, line 29), which the Examiner equates with the recitation of claim1, for example. However, the feature “respective chips 200 are raised”, of Rose, is for capturing the dispensed liquid by moving the conduit member in the direction opposite to the discharging direction of the liquid in Rose. Rose does not disclose therefore that held liquid is dispensed when the holding member is moved in the direction opposite to the dispensing direction of the liquid as in claims 1 and 58-61 of Applicants’ invention, from which all other claims depend. Accordingly, having failed to teach each and every element of the claimed invention, withdrawal of the 35 U.S.C. §102(e) rejection of claims 1, 14, 28-50 and 54-66 based on Rose is respectfully requested.

Applicants submit that the claims presented herein patentably distinguish from the art applied and pose no 35 U.S.C. §112 issues. Accordingly prompt allowance of claims 1, 28, 30-61 and 63-66 is respectfully solicited.

If the Examiner determines that anything further is desirable to place this application in even better form for allowance, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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